Appendix B

MASTER SURFACE USE PROGRAM (MSUP)
DOTY MOUNTAIN PLAN OF DEVELOPMENT (POD)
RIGHT-OF-WAY (ROW) APPLICATION FOR FACILITIES

OPERATORS:
Warren E & P, Inc.
Double Eagle Petroleum Company
Anadarko E & P Company

LANDS INVOLVED:
Sections 14, 22, & 23 in T17N R91W, 6th PM, Carbon County, Wyoming

BLM LEASES:
WYW116179, WYW133658, WYW137692, WYW141686

Surface Use Program and Plan of Development for the subject wells listed below:

Gas Wells in Section 14

AR Federal 17-91-1-14 (WYW133658)
AR Federal 17-91-3-14 (WYW133658)
AR Federal 17-91-5-14 (WYW133658)
AR Federal 17-91-7-14 (WYW133658)
AR Federal 17-91-9-14 (WYW116179)
AR Federal 17-91-11-14 (WYW116179)
AR Federal 17-91-13-14 (WYW116179)
AR Federal 17-91-15-14 (WYW116179)

Gas Wells in Section 22

AR Federal 17-91-1-22 (WYW137692)
AR Federal 17-91-3-22 (WYW141686)
AR Federal 17-91-5-22 (WYW141686)
AR Federal 17-91-7-22 (WYW141686)
AR Federal 17-91-9-22 (WYW116179)
AR Federal 17-91-11-22 (WYW141686)
AR Federal 17-91-13-22 (WYW141686)
AR Federal 17-91-15-22 (WYW141686)

Deep Injection Well in Section 22

AR Federal 17-91-22I (WYW141686)

Plan of Development for the facilities listed below:

Proposed ROW (BLM surface ownership lands): Road Access to Fee Gas Wells in T17N R91W, Section 23 (AR Fee 17-91-1-23, AR Fee 17-91-3-23, AR Fee 17-91-5-23, AR Fee 17-91-7-23, AR Fee 17-91-9-23, AR Fee 17-91-11-23, AR Fee 17-91-13-23, and AR Fee 17-91-15-23):

T16N R91W Sections 5, 6, 7
T16N R92W Section 12
T17N R91W Sections 22, 27, 28, and 33

Proposed ROW (BLM surface ownership lands): Road Access to Fee Injection Well in T17N R91W:

AR Fee 17-91-23I in Section 23
T16N R91W Sections 5, 6, 7
T16N R92W Section 12
T17N R91W Sections 22, 27, 28, and 33

Proposed ROW (BLM surface ownership lands): Road Access to Compressor Station DM-23 in T17N R91W:

T16N R91W Sections 5, 6, 7
T16N R92W Section 12
T17N R91W Sections 22, 27, 28, and 33

Proposed ROW (BLM surface ownership lands): Gathering System for Water and Gas in T17N R91W, Sections 14 and 22

Proposed ROW (BLM surface ownership lands): Buried Electrical Utility Lines in T17N R91W, Sections 14 and 22

Proposed ROW (BLM surface ownership lands): Delivery Pipeline for Gas

T16N R91W Sections 5, 6, 7
T16N R92W Sections 12
T17N R91W Sections 22, 27, 28, and 33

PROJECT DESCRIPTION

The MSUP for the Doty Mountain POD is submitted by Warren E & P, Inc. (Warren), Double Eagle Petroleum Company (Double Eagle), and Anadarko E & P Company (AEPC), collectively referred to as "the Companies." The proposed project would be located 25 miles southwest of Rawlins, Wyoming, near the intersection of Wyoming State Highway (WY) 789 and Carbon County Road 608 (Wild Cow Road). The project is one of nine areas or well pods that make up the Atlantic Rim Interim Drilling Project. Of the 24 proposed well locations, 16 wells would be located on surface ownership lands administered by the Bureau of Land Management (BLM) Rawlins Field Office (RFO) and would develop federal minerals. The remaining proposed wells (eight) would develop fee minerals on fee surface. One proposed deep injection well would be located on lands administered by RFO. The compressor station and one proposed deep injection well would be located on fee lands.

The MSUP contains surface operating procedures for the Companies' federal Applications for Permits to Drill (APDs), as required under Onshore Order No. 1. The enclosed **Project Map** shows all proposed interim drilling activities associated with the Doty Mountain POD. Name, number, location, and lease information for the proposed wells and information on the proposed facilities are listed in **Table B-1 – Doty Mountain Project**. Additional information on each federal well is contained in the **BLM APD Form 3160-3** and **Well Survey Plat**.

Wells are currently planned on federal leases WYW116179, WYW133658, WYW137692, and WYW141686 in T17N R91W, Sections 14 and 22. Lease stipulations that affect these sections are described below.

Lease WYW116179 contains a timing limitation stipulation in Section 22 to protect nesting habitat for raptors and greater sage grouse, from February 1 through July 31 (raptors), and from March 1 through June 30 (greater sage grouse and sharp tailed grouse). Lease WYW133658 contains a timing limitation stipulation in Section 14 to protect nesting habitat for raptors and greater sage grouse, from February 1 through July 31 (raptors), and from March 1 through June 30 (greater sage grouse and sharp tailed grouse). Lease WYW137692 contains a multiple mineral development stipulation and a timing limitation stipulation in Section 22 to protect nesting habitat for raptors and greater sage grouse, from February 1 through July 31 (raptors), and from March 1 through June 30 (greater sage grouse and sharp tailed grouse). Lease WYW141686 contains a timing limitation stipulation in Section 22 to protect nesting habitat for greater sage grouse, from March 1 through June 30.

The Companies are applying for a ROW to use existing roads and newly constructed roads as access to the Doty Mountain project area. An existing road runs northeast for about 2.5 miles from its intersection with County Road 608 in Section 23, T16N R92W, to a point in Section 7, T16N R91W, where new access road would be constructed. The proposed segment of new access road would follow an existing two-track that parallels Dry Cow Creek through Sections 5 and 6 in T16N R91W and Sections 27, 28, and 33 in T17N R91W.

TABLE B-1 DOTY MOUNTAIN PROJECT

Proposed Gas Wells			
Lease Number	**Well Name**	**Well Number**	**Location**
WYW116179 (Anadarko)	AR Federal	17-91-9-14	T17N R91W Sec. 14 NESE
	AR Federal	17-91-11-14	T17N R91W Sec. 14 NESW
	AR Federal	17-91-13-14	T17N R91W Sec. 14 SWSW
	AR Federal	17-91-15-14	T17N R91W Sec. 14 SWSE
	AR Federal	17-91-9-22	T17N R91W Sec. 22 NESE
WYW137692 (Anadarko)	AR Federal	17-91-1-22	T17N R91W Sec. 22 NENE
WYW141686 (Double Eagle)	AR Federal	17-91-3-22	T17N R91W Sec. 22 NENW
	AR Federal	17-91-5-22	T17N R91W Sec. 22 SWNW
	AR Federal	17-91-7-22	T17N R91W Sec. 22 SWNE
	AR Federal	17-91-11-22	T17N R91W Sec. 22 NESW
	AR Federal	17-91-13-22	T17N R91W Sec. 22 SWSW
	AR Federal	17-91-15-22	T17N R91W Sec. 22 SWSE
WYW133658 (Double Eagle)	AR Federal	17-91-1-14	T17N R91W Sec. 14 NENE
	AR Federal	17-91-3-14	T17N R91W Sec. 14 NENW
	AR Federal	17-91-5-14	T17N R91W Sec. 14 SWNW
	AR Federal	17-91-7-14	T17N R91W Sec. 14 SWNE
Fee Lease	AR Fee	17-91-1-23	T17N R91W Sec. 23 NENE
	AR Fee	17-91-3-23	T17N R91W Sec. 23 NENW
	AR Fee	17-91-5-23	T17N R91W Sec. 23 SWNW
	AR Fee	17-91-7-23	T17N R91W Sec. 23 SWNE
	AR Fee	17-91-9-23	T17N R91W Sec. 23 NESE
	AR Fee	17-91-11-23	T17N R91W Sec. 23 NESW
	AR Fee	17-91-13-23	T17N R91W Sec. 23 SWSW
	AR Fee	17-91-15-23	T17N R91W Sec. 23 SWSE
Proposed Deep Injection Wells			
Lease Number	**Well Name**	**Well Number**	**Location**
WYW141686 (Double Eagle)	AR Federal	17-91-22I	T17N R91W Sec. 22 NESW
Fee Lease (Anadarko)	AR Fee	17-91-23I	T17N R91W Sec. 23 NENW
Proposed Facilities (specified locations only)			
Lease/ROW	**Facility**	**Number**	**Location**
Fee Lease	Compressor Station	DM-23	T17N R91W Sec. 23 NENW
ROWs	Gathering Lines and Utilities	N/A	T17N R91W Secs. 14, 15, 22, 23 and 27
ROW	Delivery Pipeline	N/A	T16N R91W Secs. 5, 6, 7 T16N R92W Sec. 12 T17N R91W Secs. 22, 27, 28, and 33

This MSUP is intended to serve as the ROW application for the gas lines, water lines, access roads to well locations, access road to the compressor station, and electric lines in the POD. Roads will require a 30-foot right-of-way. Gas-gathering lines will require a 30-foot right-of-way, water-gathering lines a 20-foot right-of-way, and electric lines a 10-foot right-of-way. The delivery pipeline will require a 50-foot right-of-way. All ROWs located in the same corridor will overlap each other to the maximum extent possible, while maintaining sound construction and installation practices. Where ROW corridors are located along a road, working space for installation of facilities will be along the road. All flowlines and roads have been collocated where possible. The enclosed **Project Map** shows the location of all access routes, gatherings lines, and the delivery pipeline.

The primary targeted reservoir in the Doty Mountain POD is coal seams within recognized productive formations of the Mesaverde Group. All unproductive wells will be plugged and abandoned as soon as practical after the conclusion of production testing. Productive wells may be shut-in temporarily for gas pipeline connections and/or Sundry Notices under review by the BLM for production activities and facilities.

The Doty Mountain POD contains approximately 1,920 acres. **Table B-2** summarizes the estimated disturbances that would result from implementing the project. The following schematics, which show typical facilities, operating standards, and methodologies, are attached to this MSUP: Drill Site Layout; Well Site; Water Disposal Facility; Water Transfer Facility; and Compressor Station. Additional schematics for this POD are attached to the Master Drilling Plan (MDP): B.O.P.; Bottom Flange; Configuration Options; Completed Well; and Injection Well.

TABLE B-2 ESTIMATES OF DISTURBED AREAS – DOTY MOUNTAIN PROJECT AREA

	Evaluation Phase				Operations
Facility	Length (feet)	Width (feet)	Area, ea. (acres)	Temporary Acres	Life of Project Acres
New Roads	41,500	20	N/A	19.1	19.1
Existing Well Access Road[a]	1,300	20	N/A	N/A	N/A
Road Construction Along Existing Two-tracks	35,500	20	N/A	16.3	16.3
New Gathering Lines	54,900	30	N/A	37.8	0
New Market Access Line	37,700	50	N/A	43.3	0
New Drill Pads (24)	N/A	N/A	1.0	24.0	6.0
New Deep Injection Wells[c](2)	N/A	N/A	1.0	2.0	2.0
Existing Drill Pad (0)	N/A	N/A	N/A	N/A	N/A
Compressor Station	N/A	N/A	2.2	2.2	2.2
Water Transfer Facility (0)	N/A	N/A	0.4	0	0
Total Disturbance				144.7	45.6
Total New Disturbance (excluding existing disturbance)				128.4	29.3

a. Existing access road in T16N R91W Section 7 .
b. Improvement of existing two-tracks from Section 7 in T16N R 91W to Section 14 in T17N R91W
c. Deep injection wells would be collocated with other facilities (Figure 2-1).

Natural gas is naturally adsorbed to the surfaces of the coal matrix and typically is not free to migrate in the subsurface until pressure is relieved. Generally speaking, hydrostatic head provides the pressure that keeps the majority of the gas adsorbed to the coal. Gas is liberated from the coal matrix by the withdrawal of water, which in turn reduces the hydrostatic head present in the coal formation. Once a "critical" subsurface coal formation pressure is reached as water is pumped from the coal formation, gas is free to migrate. Gas will then flow or can be pumped to the surface through the wellbore.

The Companies plan to spud the wells during fall 2003. The wells will be drilled through the coal seam formations. The methane gas will be produced from the coal seams through perforations in the casing. Drilling and testing activities are expected to occur over several months. Wet gas from the productive wells will be routed to the compressor station by buried pipeline. Produced water will be gathered from the well sites and routed (by buried pipeline) to an approved injection well for disposal.

The wells may be tested for a period of months. Well testing involves pumping and testing water from each well and determining its capacity to produce natural gas. It is anticipated that well testing will be completed within 6 to 12 months. If unproductive, the drill holes will be plugged and abandoned in accordance with Wyoming Oil and Gas Conservation Commission (WOGCC) rules and regulations and BLM guidance as soon as practicable after the conclusion of well testing. If productive, natural gas will be collected and transported via buried pipelines to the compressor station.

An allocation meter will be used to measure raw produced gas volumes for each well in the POD. A sales meter will be located downstream of the final compressor and dehydration unit, at the compressor station, and will be used to measure dry salable-quality gas. A request for variance from Onshore Order No. 5, if needed, along with a description of the measurement equipment, will be submitted in a Sundry Notice if the wells are deemed producible.

During well testing associated with this project, natural gas, to the extent it is produced, will be vented or flared on-location in accordance with the applicable BLM Onshore Orders, Notices To Lessees, and WOGCC regulations, and authorized by the WOGCC and the BLM in Sundry Notices. During testing, produced water from the proposed wells will be transported off-location to an approved injection well for disposal.

Oil and gas activities in Wyoming are managed by the WOGCC. All of the Companies' operations, and those of its contractors, will be conducted in accordance with all BLM and WOGCC rules and regulations.

Drill site locations will be on approved 80-acre spacing. The WOGCC has established an 80-acre well spacing pattern for wells completed in the Mesaverde Group in the Doty Mountain area, including the project area. Spacing for this area was established under Cause No. 1, Order No. 1, Docket Nos. 157-2001 and 113-2002.

1. EXISTING ROADS AND TRAVELWAYS

The project area is accessible from Baggs, Wyoming, by traveling approximately 20 miles north on WY 789 to the intersection with Carbon County Road 608, or south on WY 789 from Interstate 80 (I-80) to Carbon County Road 608. Turn east onto County Road 608 and travel approximately 3 miles northeast. In Section 23, T16N R92W, County Road 608 turns to the southeast and an existing road continues to the northeast. Turn northeast and travel approximately 6 miles to the project area.

The existing road runs northeast for about 2.5 miles from its intersection with County Road 608 in Section 23, T16N R92W, to a point in Section 7, T16N R91W, where new access road would be constructed. The proposed segment of new access road would follow an existing two-track that parallels Dry Cow Creek through Sections 5 and 6 in T16N R91W and Sections 27, 28, and 33 in T17N R91W. As stated previously, the Companies are applying for a ROW to construct road access along existing two-tracks that currently provide vehicle access and construct new road access to the project area. The remainder of the access road is on private surface and will be maintained by access agreement with fee surface owners.

Local roads are shown on the enclosed map of the project area. Existing roads and gates will be used when practical. If necessary, existing roads will be improved. All existing roads shall will be brought up to minimum standards for a Resource Road as found in BLM Manual 9113.

The existing roads will be maintained in the same or better condition as existed prior to the start of operations. Maintenance of the roads used to access the well locations will continue until final abandonment and reclamation of the well locations occur. A regular maintenance program will include, but is not limited to, blading, ditching, culvert installation and cleanout, and gravel surfacing where excessive rutting or erosion may occur. Limiting or temporarily suspending vehicle access during adverse conditions will reduce excessive rutting or other resource damage that may be caused by vehicle traffic on access roads that are wet, soft, or partially frozen. If vehicles create ruts in excess of 4 inches deep, the soil will be deemed too wet to adequately support vehicles, and routine activities shall be temporarily suspended.

Culverts will be placed in the existing BLM roads as the need arises or as directed by BLM's Authorized Officer. Gates and cattle guards will be installed where appropriate (refer to Project Map).

The Companies will share maintenance costs in dollars, equipment, materials, or labor proportionate to the Companies' use with other authorized users. Upon request, the BLM's Authorized Officer shall be provided with copies of any maintenance agreement entered into.

During periods of high potential for wildfire, extreme caution will be used in accessing the drill locations. To ensure that no ignitions occur, measures such as mowing the access rights-of-way or limiting vehicles may be undertaken as necessary. The Companies are sensitive to fire issues and risks in the western United States.

2. PROPOSED ACCESS ROUTES

Well Access

New access routes will be sited to avoid sensitive resource areas, such as leks, and areas susceptible to increased resource damage from the proposed project, such as areas of steep terrain or poor vegetative cover. Every effort will be made to minimize the amount of cut-and-fill construction needed to maintain safe, environmentally sound, year-round access to the well sites. The special conditions of approval specified for this POD by the BLM will be implemented.

Access to the individual well sites will be provided by crowned and ditched roads that are surfaced with an appropriate grade of gravel. To the extent possible, the access roads will follow existing terrain and two-tracks that would represent a sound alignment for a constructed road.

Where possible, roads will be constructed along existing two-tracks, as specified by BLM, to provide access to well sites. Newly constructed access routes will be crowned, ditched, and graveled, as specified by BLM. All equipment and vehicles will be confined to identified travel corridors and other areas specified in this MSUP. Gates and cattle guards will be installed where appropriate. The access roads will be surfaced with an appropriate grade of aggregate or gravel to a depth of 4 inches before the drilling equipment or rig is moved onto the pad.

Unless otherwise exempted, free and unrestricted public access will be maintained on the access road. All construction work will be accomplished as specified by the landowner and the BLM. Access roads will be maintained in a safe and usable condition. A regular maintenance program will include, but is not limited to, blading, ditching, installing or cleaning culverts, and surfacing. Maintenance work will be accomplished as specified by the BLM.

The access roads will be constructed to minimum standards for a BLM Resource Road, as outlined in BLM Manual 9113. The minimum travelway width of the road will be 14 feet with turnouts. No structure will be allowed to narrow the road top. The inside slope will be 4:1. The bottom of the ditch will be a smooth V with no vertical cut in the bottom. The outside slope will be 2:1 or shallower. Turnouts will be spaced at a maximum distance of 1,000 feet and will be intervisible.

Wing ditches will be constructed as deemed necessary to divert water from the road ditches. Wing ditches will be constructed at a slope of ½ percent to 1 percent.

Topsoil and vegetation will be windrowed to the side of the newly constructed access roads. After the roads are crowned and ditched with a 0.03 to 0.05 foot crown, the topsoil will be pulled back onto the cut slopes of the road right-of-way so no berm is left at the top of the cut slope.

Drainage crossings on the access routes will be low water crossings or crossings using "fish friendly" culverts. Crossings of tributaries to Dry Cow Creek will be accomplished according to BLM specifications. Low water crossings would be used in shallow channel crossings and at crossings of the main channel. Crossings of the main channel would consist of excavating an area approximately 4 feet deep, or deeper if specified by BLM, under the travelway and filling it with rock and gravel to the level of the drainage bottom. Channel banks on either side of these crossings would be cut down to reduce grade where necessary. Culverts would be installed on smaller, steeper channel crossings. Rip-rap will be added at the outlet of each culvert to minimize erosion. Topsoil would be conserved before channel crossing construction occurs. Additional culverts would be placed as the need arises or as directed by the BLM's Authorized Officer. Also, the total area to be disturbed would be flagged on the ground for review during the onsite and before construction begins.

Where low water crossings are required, a 30-inch deep rock fill over geotextile through the drainage will be required. The rock fill will consist of 75 percent 3-inch to 10-inch diameter rough rock and 25 percent Wyoming Grading "W" Material to fill the voids. The geotextile will be overlapping at all joints and will extend beyond the rock fill. The top of the rock fill in the drainage bottom will match the elevation of the natural drainage to allow for smooth flow with no unnatural scouring or water backup. Four inches of course gravel over the rock will be used for the surface.

Culverts will be covered with a minimum of 12 inches of fill or one-half the diameter of the pipe, whichever is greater. The inlet and outlet will be set flush with existing ground and lined up in the center of the draw. Before the area is backfilled, the bottom of the pipe will be bedded on stable ground that does not contain expansive or clay soils, protruding rocks that would damage the pipe, or unevenly sized material that would not form a good seat for the pipe. The site will be backfilled with unfrozen material and rocks no larger than 2 inches in diameter. Care will be exercised to thoroughly compact the backfill under the haunches of the conduit. The backfill will be brought up evenly in 6-inch layers on both sides of the conduit and thoroughly compacted. A permanent marker will be installed at both ends of the culvert to help keep traffic from running over the ends. Culverts will be installed in a manner that minimizes erosion or head-cutting and may include rip rapping or other measures as required. Additional culverts will be placed in the access road as the need arises or as directed by BLM's Authorized Officer.

If additional structures are warranted to maintain the access routes in acceptable condition during use, the affected road segments will be identified for BLM approval. In the event that specific BLM field survey requirements are not provided or do not exist, the field survey requirements described in BLM Manual 9113 will be followed.

The access roads will be winterized by providing a well-drained travelway to minimize erosion and other damage to the roadway or the surrounding public land. Construction activity or routine maintenance will not be conducted using frozen or saturated soil material or during periods when watershed damage is likely to occur.

No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 4 inches deep, the soil will be deemed too wet to adequately support construction equipment, and construction and maintenance will be temporarily suspended.

The written approval of the Authorized Officer will be obtained before snow removal is undertaken outside the new and existing roadways. If approval is given, equipment used for snow removal operations outside the road ditches will be equipped with shoes to keep the blade off the ground surface. Special precautions will be taken where the surface of the ground is uneven to ensure that equipment blades do not destroy the vegetation.

Design drawings and templates will be submitted only if specifically required by the BLM. A "plans-in-hand" review will be conducted with the drilling contractor prior to construction to review the access routes to the well sites. Directional markers will be set where needed and will be removed as soon as they are no longer needed.

If drilling is productive, all access roads to the well site would remain in place for well servicing (such as maintenance and improvements). Portions of the drill location outside the well pad that are no longer needed would be reclaimed. Any portions of the ROW for the access road that are no longer needed also would be reclaimed. The outside ditch cuts also would be seeded and reclaimed.

Compressor Station Access

The road to the compressor station in Section 23 will be constructed as an all-weather road with a travel width of approximately 14 feet, using requirements set out by the BLM, if no other requirements are provided by the landowner. All equipment and vehicles will be confined to the travel corridor and other areas specified in the POD. All disturbance related to this access road will be confined within the travel corridor.

3. LOCATION OF EXISTING WELLS

Seven permitted water wells are located within 1 mile of the project area **(Table B-3 Permitted Water Wells Within 1 Mile of the Doty Mountain Project Area)**. Five of those wells are located within the inferred circle of influence (within a half-mile radius) of AEPC's proposed gas wells. One of those wells yields water and is used to supply a stock pond, the remaining four are monitoring wells. All permitted wells are much shallower than the proposed wells and proposed injection zones, and are not expected to be impacted. This information, including the well site and other pertinent data, was obtained from the Wyoming State Engineer's Office (WSEO).

Each Company will offer a water well agreement to the landowner for all wells within the circle of influence for that Company's producible wells.

The enclosed **Project Map** shows locations of disposal, drilling, producing, injection, and abandoned oil and gas wells within 1 mile of the Doty Mountain POD wells. The well locations were obtained by a search of the WOGCC website.

TABLE B-3 PERMITTED WATER WELLS WITHIN 1 MILE OF THE DOTY MOUNTAIN PROJECT AREA

Permit No.	Twn	Rng	Sec	Qtr/Qtr	Applicant	Facility Name	Use	YldAct	Well Depth	Stat Depth
P33768W	17N	91W	15	SWNW	Union Pacific Minerals Inc.	ARW 1	MON, MIS	0	280	144.88
P54262W	17N	91W	23	NWNW	Union Pacific Minerals Inc.	AR 201 OW	MON, MIS	0	220	64
P54264W	17N	91W	23	SESW	Union Pacific Minerals Inc.	AR 200 OW	MON, MIS	0	419	107
P56613W	17N	91W	23	SWNW	P H Livestock Co.	Y Pasture #1	STO	5	120	35
P59801W	17N	91W	23	NENW	WY Board of Land Commissioners Pan Artic Exploration LTD	9C-16-19-89	MON, MIS	Unk	Unk	Unk
P59802W	17N	91W	23	SWNW	WY Board of Land Commissioners Pan Artic Exploration LTD	1-16-19-89	MON, MIS	Unk	Unk	Unk
P17356W	17N	91W	28	NENE	USDI BLM	#4139	STO	5	100	Unk

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES, IF WELLS ARE PRODUCTIVE

On Well Pad

Wellhead facilities would be installed if the wells are productive. Natural gas and produced water would be collected and transported from the wellhead via buried pipelines. Gas and water would be measured as specified elsewhere in this MSUP.

The long-term surface disturbance at the location of each productive well would encompass approximately 0.25 acre, including cut and fill slopes. Typically, only the production facilities at the well site would be fenced or otherwise removed from existing uses. A loop road or a small, graveled pad area would provide a safe turnaround area for vehicles. The perimeter of the pad area would be fenced if adjacent cut and fill slopes represent a safety hazard for vehicles.

The wellhead facilities would be contained within an area covering approximately 15 feet by 15 feet. The surface equipment at each well will consist of the wellhead, a pump panel, and an insulated wellhead cover. Additionally, a vertical separator at some well sites would separate gas from the water stream. Each productive well is expected to require installation of an electric submersible pump below ground level, which will be used to produce water necessary to lower pressure within the coal seams. A schematic of a **Typical Well Site** is enclosed with the MSUP.

The Companies will paint structures at wells and central facilities with flat colors that blend with the adjacent undisturbed terrain. The paint used will be a color which simulates "Carlsbad Canyon" tan, color 2.5Y 6/2 of the "Standard Environmental Colors," unless otherwise specified by the BLM. This measure does not apply to structures that require safety coloration in accordance with the requirements of the Occupational Safety and Health administration (OSHA).

Electricity would be used to power pumps during well development and to initiate and maintain production. Engines fired by natural gas or propane would be used to run generators temporarily at individual wells until electric distribution lines are analyzed in the Atlantic Rim EIS and then constructed. If a well is productive, it will be shut-in until production facilities are constructed.

After construction of the production facilities, a temporary generator would be centrally located and used until permanent electrical services are installed. The Companies may choose to use centrally located generation equipment at the compressor station and an underground distribution system to supply power to well sites.

Where practical, utility lines on the well pad would be installed in the same trench as the gas-gathering and water-gathering lines to minimize surface disturbance. All utility lines would be buried in accordance with the Interim Drilling Policy.

Off Well Pad

Pipelines (Gathering Lines and Delivery Pipeline)/Compressor Station/ Water Handling and Disposal Facilities/Injection Wells/Tanks

The operator will submit a Sundry Notice for approval prior to construction of any new surface-disturbing activities on-lease that are not specifically addressed in the MSUP or individual APDs.

Pipelines

The ROWs for the gathering systems will typically follow access roads, except in a limited number of cases where topography dictates otherwise or as required by BLM. ROWs located in the same corridor will overlap each other to the maximum extent possible, while maintaining sound construction and installation practices. Where ROW corridors are located along a road, working space for installation of facilities will be along the road.

Trenches will be excavated to install the flowlines and electrical lines. Trenching will occur as close to the road prism as feasible. Gas-gathering and produced water-gathering pipelines (as well as utility lines) will be laid together in the same trench when practical. Trenches excavated for well gathering lines and electrical lines (which would require ROWs of 30 feet in width for gas lines, 20 feet in width for water lines, and 10 feet in width for electrical lines) are expected to temporarily disturb 30-foot wide corridors, which would be reclaimed as soon as practical after trenching and backfilling are completed. An additional area, estimated to be 10 feet wide, would not be disturbed during construction. However, it would be used to transport machinery, personnel, and equipment along the corridor to install flowlines and electrical lines wherever the gathering system would not follow an access road. This corridor is used to allow working room for the machinery, personnel, and equipment during the installation process. Corridors for the system of gathering lines in the Project Area would be 10.4 miles long. About 6.7 miles of corridors for gathering lines would be located on BLM surface ownership lands.

Construction and installation of gathering lines for gas and water would occur at the same time as access roads are constructed or immediately after drilling has been completed. Construction and installation of the gas delivery pipeline would occur after the producibility of the wells has been confirmed. All produced water used to test the integrity of the gas delivery pipeline (500 barrels [bbls] or 21,000 gallons) would be injected in deep injection wells. Pipeline corridors would be reclaimed as soon as practical after construction of the pipeline is complete. Three types of pipelines would be constructed as part of the proposed project:

1. A gas-gathering pipeline system (low pressure) would be constructed from the wellheads to the compressor station. This system would use high-density polyethylene (HDPE) pipe, starting with 4-inch diameter pipe at the wellhead and graduating up to 12-inch diameter pipe at the inlet to the compressor.

2. A produced water-gathering pipeline system (low pressure) would be constructed from the wellheads to the centralized facilities for deep injection. This network of water lines would use 4-inch through 12-inch diameter pipe made of HDPE.

3. Should encouraging quantities of natural gas be discovered, a gas delivery pipeline (high pressure) would be constructed. This pipeline would be constructed of 8-inch diameter steel pipe.

The alignment of the delivery line from the compressor station to the existing transmission pipeline is shown on the **Project Map**. The Companies are applying for a ROW for the delivery pipeline that would be buried 6 feet deep on a 50-foot wide ROW. This pipeline would be anchored at the compressor station and would proceed southwest to the existing pipeline in Section 12 of T16N R92W. This gas delivery pipeline would be 7.2 miles long, of which about 6.6 miles would be located on BLM surface ownership lands.

Construction and installation of this delivery pipeline would temporarily disturb a 50-foot wide corridor, which will be reclaimed as soon as practical after construction is completed. An area, estimated to be 25 feet wide, would not be disturbed during construction, but would be used to transport machinery, personnel, and equipment along the corridor to install the pipeline wherever the delivery pipeline would not follow an access road. This corridor would allow working room for machinery, personnel, and equipment during the installation process.

The delivery pipeline will be constructed using open cut construction methods for upland areas, and dry ditch construction methods for water body crossings. The disturbed area will be kept to a minimum. Surface soil material will be stockpiled to the side and segregated. Surface soil material will not be mixed or covered with subsurface material. Trenches will be compacted during backfilling. Pipeline routes will be graded to conform to the adjacent terrain. Cuts and fills will be made only where necessary. After construction, cut and fill slopes will be waterbarred or regraded to conform to the adjacent terrain, as specified by BLM. The constructed pipeline will not block, dam, or change the natural course of any drainage. Water body crossings will be completed as quickly as possible, with ditching, pipeline installation, and backfilling completed in less than 48 hours if possible. All minimum requirements contained in the pipeline safety regulations of the U.S. Department of Transportation will be met or exceeded.

The Companies would complete the pipeline during periods when key habitats are not occupied to limit human presence in and disturbance of key wildlife habitats during critical periods of use. The availability of adequate working space would accelerate construction.

In order to minimize surface disturbance, the operator will use wheel trenchers (ditchers) or ditch witches, where possible, to construct all pipeline trenches associated with this project. Track hoes or other equipment will be used where topographic or other factors require their use.

Trenches that are open for the installation of pipelines will have plugs placed no more than 1,000 feet apart to allow livestock and wildlife to cross the trench or walk out of it, if needed. Placement of plugs will be determined in consultation with BLM and any affected landowner.

Procedures will be implemented to prevent livestock or wildlife from falling into open excavations. Procedures could include temporary covers, fencing, or other means acceptable to BLM and any affected landowner.

Compressor Station

The compressor station will be sited to allow for the installation of one compressor initially, with the addition of up to two more compressors later in the life of the field. Each compressor would be sized to handle 5 million cubic feet per day (MMCFD) from 15 pounds per square inch (psi) suction pressure to 1,200 psi discharge pressure. Each compressor would be driven by a natural gas engine that would be designed to meet all specifications established by the Wyoming Department of Environmental Quality, Air Quality Division (WDEQ–AQD). Engines used to drive compressors would have emissions of less than 1.5 grams per brake horsepower per hour (g/bhp-hr), or less than 16.7 tons per year of nitrogen oxides (NO_x), and 0.5 g/bhp-hr, or less than 5.6 tons per year of carbon monoxide (CO). Additional equipment at the compressor station would include a tri-ethylene glycol (TEG) dehydration system, which would dry the gas to meet pipeline-quality specifications of the market pipeline.

The compressor station facility is expected to be constructed within a site area covering approximately 300 feet by 300 feet (see enclosed **Typical Compressor Station**). In addition to the facilities on the pad, the Companies will construct drainage ditches to divert stormwater away from the compressor station pad. About one-half of the compressor station site area will be affected by construction, maintenance, and operation of the facility. The compressor station facility will be of all-weather construction, having a thick layer of gravel surfacing over the pad site. Topsoil will be removed and conserved for later reclamation activities. The compressor station will consist of an insulated header building containing a separator or a separator and allocation meters for each well. The compressor station will also have a dehydrator that will remove water from the wet gas stream. The water will be pumped from the header building to an approved injection well. If different production facilities are required, plans will be submitted in a Sundry Notice.

Water Handling and Disposal Facilities and Injection Wells

Within 90 days of initial production start-up, the operator will submit an analysis of the produced water to the BLM's Authorized Officer. Approval of this POD includes approval for Onshore Order #7 to dispose of produced water. Produced water will be injected into an authorized injection well **(Table B-1)**, except as noted below. Any changes in the produced water disposal method or location must receive written approval from BLM's Authorized Officer before the changes take place.

A small portion of the water produced from gas wells (about 5 gallons per minute at each location identified on the Project Map) may be dispensed for use by livestock at locations specified by BLM and the surface owners. The water will be piped into self-contained tire tanks that will not discharge produced water into surface drainages.

Water produced at the well sites will be gathered and transported to an injection well for disposal. Each injection well will be drilled, cased, and cemented from total depth (TD) to surface (see attached schematic of **Typical Injection Well**). Produced water will be injected in one of two deep injection wells completed in the Cherokee/Deep Creek Sandstones. One of the deep injection wells would be a federal well.

The deep injection wells would be drilled with the same equipment and personnel used for the gas wells. Depth of the injection wells, which would be completed in the Cherokee or Deep Creek sands, is expected to be between 3,800 and 4,600 feet. Drilling and completing each deep injection well would require approximately 7 to 14 days; installing surface equipment, holding tanks, and pumping equipment may require an additional 14 days.

The Companies' proposed activities within the Doty Mountain area have been subdivided by location to highlight water handling methods proposed in each area. All water used to test the integrity of gathering lines would be injected at a deep injection well.

Northern Area - Section 14 (N1/2) – Produced water from four proposed federal wells in this area would be injected at the deep injection well in Section 23 (AR Fee 17-91-23I).

Central Area – Section 14 (S1/2), Section 22 (E1/2E1/2), and Section 23 (All) – Produced water from 14 proposed wells (eight fee wells and six federal wells) in this area would be injected at the AR Fee 17-91-23I deep injection well in Section 23 or the deep injection well in Section 22 (AR Fed 17-91 22I).

Western Area – Section 22 (W1/2 and W1/2E1/2) – Produced water from six proposed federal wells in this area would be injected at the deep injection well in Section 22 (AR Fed 17-91 22I).

The source of the water to be disposed is the coals in the Mesaverde Group. Coal bed formation water (produced water) will be collected in a buried polyethylene flowline (pipeline) for transport to the water disposal facility location approved by the WOGCC and the BLM.

A typical water disposal facility would consist of a pad of approximately 200 feet by 200 feet that would disturb an estimated 1.0 acre, including cut and fill slopes. Each facility would contain four 400-bbl water tanks, pump house, piping, and well house (see attached schematic of **Typical Water Disposal Facility**). An approximate 3.5-foot berm would be constructed around the perimeter of the water tanks, excluding the pump shed, at each disposal facility to contain any potential spills on the pad. The pump shed would be excluded from the berm area to minimize the potential for electrical or safety hazards that could occur if water entered the pump shed and caused electrical shorts. The berm

would be constructed to contain the water from the largest tank, plus 10 percent, and maintain a freeboard (extra capacity) of 1 foot.

Transfer pumping stations, consisting of two 400-bbl water tanks with associated pump and piping, may be needed (see attached **Typical Water Transfer Facility**). Water transfer pumping stations may be used during production operations to transfer produced water from the gas wells to the injection facilities. The transfer pumping stations are needed in areas where differences in elevation require supplemental pumping to transfer the produced water. Each pumping station would contain up to two 400-bbl water tanks, an inlet separation vessel, and a small centrifugal water pump. A small pump shed would be constructed to enclose the pump. Each pumping station would consist of a pad of approximately 125 feet by 125 feet that would disturb an estimated 0.4 acre, including cut and fill slopes. An approximate 3.5-foot berm would be constructed around the perimeter of the water tanks, excluding the pump shed, at each pumping station to contain any potential spills on the pad. The pump shed would be excluded from the berm area to minimize the potential for electrical or safety hazards that could occur if water entered the pump shed and caused electrical shorts. The berm would be constructed to contain the water from the largest tank, plus 10 percent, and maintain a freeboard (extra capacity) of 1 foot. These transfer stations will be located near proposed disturbance areas, outside cultural sites, and, where possible, away from any known sensitive wildlife or resource areas. Final location of the water transfer facilities will be submitted in a Sundry Notice.

Tanks

The water tanks at transfer and disposal facilities will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of water. The tanks will be located away from the established drainage patterns in the area and will be constructed to prevent the entrance of surface water.

The closed-top water tanks will be fenced or capped to prevent livestock or wildlife entry.

The water tanks will be kept reasonably free from surface accumulations of liquid hydrocarbons and are not to be used for disposal of water from other sources without the prior approval of the BLM. Any discharge from the tanks will be reported to the BLM as required by NTL-3A.

All storage tanks and compressor facilities designed to contain oil, glycol, produced water, frac-ing fluids, or other fluid, which may constitute a hazard to public health or safety, will be surrounded by a secondary means of containment for the entire contents of the largest single tank in use, plus one foot of freeboard. The 3.5 foot berms planned for any closed produced water tanks used at well sites before flowlines are constructed, closed tanks to hold frac-ing fluids during well completion and testing, water disposal facilities, and water transfer facilities will contain the contents of the largest tank in use at that site, plus one foot of freeboard. The containment or diversionary structure will be impervious to any oil, glycol, produced water, or other toxic fluid for 72 hours and would be constructed so that any discharge from a primary containment system would not drain, infiltrate, or otherwise escape to groundwater, surface water, or navigable waters before cleanup is completed.

5. LOCATION AND TYPE OF WATER SUPPLY FOR DRILLING

Water to drill the first well will be trucked to the Doty Mountain project area from the AR Fee 20 89 SE29 well located in T20N R89W, Section 29.

Water produced from project wells will be transported to nearby drilling locations and used to drill subsequent wells.

Water for use in drilling the wells would be obtained from existing wells completed in the coal seams of the Mesaverde Group. Approximately 700 barrels of water (almost 30,000 gallons) would be needed to drill each well. The actual volume of water used in drilling operations would depend on the depth of the well and any losses that might occur during drilling. The proposed project also would require almost 70,000 gallons of water per well for preparation of cement and stimulation of the well (14,000 gallons) and control of dust (55,440 gallons). In all, nearly 100,000 gallons (about 0.3 acre-feet) of water per well would be used.

Any changes in the water source or method of transportation must receive written approval from BLM's Authorized Officer before the changes take place.

6. CONSTRUCTION MATERIALS

Construction materials (mineral material aggregate suitable for surfacing material) will be purchased from a nearby private source or a local supplier having a permitted source of materials in the area. No construction materials will be removed from federal and/or Indian lands without prior approval from the BLM.

7. METHODS FOR HANDLING WASTE DISPOSAL

Drill cuttings (rock fragments generated during drilling) will be produced during drilling of the borehole. Cuttings will be buried in the reserve pit upon closure of the reserve pit.

No oil or other oil-based drilling additives, chromium/metals-based muds, or saline muds will be used during drilling of these wells. Only fresh water, biodegradable polymer soap, bentonite clay, and non-toxic additives will be used in the mud system. Details regarding the mud program are incorporated within the MDP. These wells will not produce oil or salt water typical of oil production. Furthermore, other liquid hydrocarbons are not anticipated. Should unexpected liquid petroleum hydrocarbons (crude oil or condensate) be encountered during drilling or well testing, all liquid petroleum hydrocarbons will be contained in test tanks on the well site.

Dust abatement will comply with all applicable WOGCC, WDEQ, or BLM requirements. Only water suitable for livestock use will be used for dust abatement. Only disturbed areas will be sprayed. Spraying will be done to reduce runoff and channelized flow.

A portable, self-contained chemical toilet will be provided on location during drilling and completion operations. Upon completion of operations, or as required, the contents of toilet holding tanks will be disposed of at an authorized sewage treatment and disposal facility. Disposal will be in accordance with State of Wyoming, Carbon County, and BLM requirements regarding sewage treatment and disposal. The Companies will comply with all state and local laws and regulations pertaining to disposal of human and solid wastes.

No trash will be placed in the reserve pit. All refuse (trash and other solid waste including cans, paper, cable, etc.) generated during construction, drilling, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and hauled to an authorized disposal site.

Immediately after removal of the drilling rig, all debris and other waste materials not contained within trash barrels will be cleaned up and removed from the well location. No potentially adverse materials or substances will be left on the drill locations.

Hazardous Materials Management

All project-related activities involving hazardous materials will be conducted in a manner that minimizes potential environmental impacts. An on-site file will be maintained containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds, or substances that are used in the course of construction, drilling, completion, production, and reclamation operations. Netting will be placed over any pits that may contain hazardous substances (Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] Section 101(14)), as determined by visual observation or testing. The mesh diameter shall be no larger than 1 inch.

No hazardous substance, as defined by CERCLA, will be used in the construction or drilling operations associated with these wells. No Resource Conservation and Recovery Act (RCRA) hazardous wastes will be generated by well-drilling operations. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment (regardless of quantity) listed as hazardous under CERCLA of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; (2) any hazardous waste as defined in RCRA of 1976, as amended; and (3) any nuclear or nuclear byproduct as defined by the Atomic Energy Act of 1954, as amended, 42 U.D.C. 2001 et seq. The operator will be required to provide a referenced list of hazardous materials that could be used, produced, transported, disposed of, or stored on the well location including a discussion on the management of the hazardous materials.

Any spills of oil, gas, or any other potentially hazardous substance will be reported immediately to the BLM, landowner, local authorities, and other responsible parties and will be mitigated immediately, as appropriate, through cleanup or removal to an approved disposal site.

8. ANCILLARY FACILITIES

Several self-contained travel-type trailers may be used onsite during drilling operations. No facilities other than those described in this MSUP will be constructed to support the operations associated with the wells.

9. WELL SITE LAYOUT

A schematic drawing of the **Typical Drill Site Layout** used for each well is enclosed with this MSUP. Information on each federal well is contained in the **BLM APD Form 3160-3, Well Survey Plat**, and **Drill Pad Cross Section** already on file with BLM. The cross section shows the orientation of the drill pad with respect to the topographic features (cut and fill), facilities, and access to the pad.

At each drill location, surface disturbance will be kept to a minimum. The areal extent of each drill pad is approximately 200 feet by 200 feet. Each drill pad will be leveled using cut and fill construction techniques where needed. Prior to constructing the drill pad the top 6 to 8 inches of soil (more if available) and associated vegetative material will be removed and stockpiled. Drainage ditches will be constructed to divert stormwater away from each pad. All surface disturbance related to drilling will be confined to each drill site.

The Companies plan to use one reserve pit at each drilling location. A reserve pit is used during drilling to circulate the drilling mud (mostly bentonite clay and fresh water) and rock cuttings out of the borehole and for holding drilling fluids. This pit will be designed and constructed according to WOGCC and BLM requirements.

Each reserve pit will be approximately 20 feet deep (including 2 feet of freeboard), and will be 40 feet wide and 40 feet long (at the surface). Each pit will be excavated within the "cut area" of the drill site to minimize any potential for slope failure. Each pit will be designed to prevent collection of surface runoff and will be closely monitored to ensure no pit overflows occur. The reserve pit will be open for an estimated 2 to 8 weeks to allow for evaporation of pit fluids. During this time the pit will be closed off from wildlife and livestock by two strands of barbed wire above a woven wire fence.

Each reserve pit will be constructed in a manner that minimizes the accumulation of surface precipitation runoff into the pit. This will be accomplished by appropriate placement of subsoil/topsoil storage areas or construction of berms or ditches.

Netting will be placed over any pits that have been identified as containing oil, as determined by visual observation or testing. The mesh diameter will be no larger than 1 inch. For the protection of livestock and wildlife, all pits and open cellars will be fenced. Fencing shall be in accordance with BLM specifications.

A conventional drilling rig would be used to drill the gas wells. Additional equipment and materials needed for drilling operations would be trucked to the drill location. Depending on the location of the coal seam, each producing well would be drilled to a depth of 2,275 feet to 3,100 feet or deeper. Methane gas in the coal seam would be

produced through perforations in the casing. The well control system will be designed to meet the conditions likely to be encountered in the hole and will conform to BLM and State of Wyoming requirements.

The drilling and completion operation for a shallow gas well normally requires a maximum of 10 to 15 workers at a time, including personnel for logging and cementing. Each well would be drilled within 7 to 10 days. A well completion program may be initiated to stimulate production of gas and to evaluate the characteristics of gas and water production in preparation for production of gas from a drilled, cased, and cemented well. Wells determined to be productive would be shut in until pipelines and other production facilities are constructed.

A mobile completion rig similar to the drill rig may be transported to the well site and used to complete each well. Completion operations are expected to average 2 to 5 days per well. When the applicable permits are received, methane gas may be vented or flared. Formation water may be temporarily contained in the reserve pit during drilling and well completion activities. All frac-ing fluids will be contained in closed tanks on location. During the testing period, produced water from the Mesaverde aquifer will be contained in closed tanks on location or trucked to an authorized disposal well, pending the completion of flowlines for produced water. All closed tanks on location will be encompassed by a 3.5 foot berm that will contain the entire contents of the largest tank in use, plus 10 percent, with one foot of freeboard, as authorized by BLM.

10. PROGRAMS FOR RECLAMATION OF THE SURFACE

BLM surface ownership lands that contain disturbed areas or facilities that are no longer needed would be reclaimed at the earliest opportunity in accordance with applicable regulations and agency guidance. Non-federal lands would be reclaimed in accordance with the requirements of the surface owner.

Roads, culverts, cattle guards, pipelines, stock water facilities, or other structures could be left in place at the end of the project for any beneficial use, as designated by the affected surface owners and BLM. Water wells and produced water would be available to the surface owners and BLM, provided that appropriations, diversions, and storage rights are properly filed with the WSEO.

As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned and site reclamation will commence. The BLM will be notified prior to commencement of reclamation operations. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

Upon completion of drilling, the reserve pit will be dewatered and reclaimed in accordance with BLM guidance. Typically, this procedure involves allowing the contents to dry naturally, and then backfilling, re-contouring, and reclaiming the reserve pit area to approximate pre-drilling site conditions. The reserve pit will be backfilled with a minimum cover of 5 feet of soil or subsoil material.

After abandonment of productive wells, all wellhead equipment that is no longer needed will be removed, and the well sites will be restored.

Any areas, including the drilling locations, reserve pits, or access routes, that are disturbed by earthwork will be recontoured to a natural appearance as near to the original contour as possible as soon as practical after the conclusion of operations. Any flowline trenches that may be constructed will be backfilled completely.

Recontoured areas will graded to be outsloped, and waterbreaks will be constructed where needed to avoid concentrating surface waters and producing gullies. The land surface will be left "rough" after recontouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

All topsoil conserved during earthwork will be redistributed evenly and left "rough" over these recontoured areas. BLM goals for vegetative cover will guide revegetation efforts. Common goals are erosion control, weed control, palatable and nutritious forage for livestock and wildlife, and visual aesthetics.

Revegetation efforts will comply with BLM specifications on all BLM surface ownership lands. If no specifications are provided, the following specifications will be used. Seeding is expected to occur in the fall after September, prior to ground frost, or in the spring after frost has left the ground. The seed mixture, including fertilizer and mulching requirements, seeding depth, and seed drilling specifications, will be developed in consultation with the BLM. Seed will be drilled on the contour using a seed drill equipped with a depth regulator to ensure even depths of planting. Seed will be planted between one-quarter to one-half inch deep. The anticipated seed mix to be applied and rates of application are listed below in **Table B-4**. Soil material that will be stockpiled for 10 months or longer will be seeded according to BLM specifications, to the extent practicable. Prior to seeding, the stockpile will be protected from wind and water erosion by roughening the soil surface, covering the stockpile with vegetation that has been removed, and mulching, if necessary.

TABLE B-4 SEED MIX FOR RECLAMATION

Species	Rate of Application*
Western Wheatgrass	4 lbs./Acre
Green Needlegrass	4 lbs./Acre
Indian Ricegrass	4 lbs./Acre
Sandberg Bluegrass	0.5 lbs./Acre
Gardner's Saltbush	1 lb./Acre
Winterfat	0.5 lbs./Acre

These rates of application apply to pure live seed (PLS) that is used for drill seeding. For broadcast seeding, the rates of application will be doubled.

11. SURFACE OWNERSHIP

U.S. Bureau of Land Management
Rawlins Field Office
1300 North Third
Rawlins, Wyoming 82301-2407
(307) 328-4200

Cecil Ray and Kathleen Weber *(Sections 23 & 27)*
P.O. Box 70
Baggs, Wyoming 82321
(307) 383-7213

12. OTHER INFORMATION

A **Water Management Plan** is enclosed with this MSUP.

The Companies are the lessee or operator for the federal oil and gas leases associated with this MSUP and these APDs.

No slopes in excess of 25 percent would be affected by this proposal. No activities are planned near existing highways, railroads, pipelines, or powerlines. There are no occupied buildings or residences within one-quarter mile of the proposed drill sites.

Any road crossings of dry drainages, riparian, or other wetland areas will use appropriate Best Management Practices (BMP) to minimize impacts to these areas.

The presence, distribution, and density of noxious weeds in the project area will be monitored. The well access roads and well pads will be inspected regularly to ensure that noxious weeds do not become established in newly disturbed areas. Control methods will be based on available technology, taking into consideration the weed species present. Methods of noxious weed control may include revegetation of disturbed areas to reduce the potential for and success of weed establishment, mowing, hand-pulling, or application of appropriate herbicides. All BLM requirements associated with the control of noxious weeds will be met.

The project area encompasses public lands that contain sagebrush/grassland vegetation communities on undulating uplands, terraces, and riparian areas along drainages. The existing stream channels are ephemeral and are partially vegetated with grasses and shrubs. Several perennial springs occur approximately 1 mile east of the project area. However, the springs are contained in stock ponds and do not form perennial streams. Muddy Creek, a perennial stream, occurs about a mile north of the project area.

Local flora consist primarily of needlegrass, western wheatgrass, prairie junegrass, blue grama grass, Indian rice grass, prickly pear cactus, and two varieties of big sagebrush intermixed with rabbbitbrush, snakeweed, horsebrush, and occasionally dense greasewood. Local fauna consist primarily of mule deer, antelope, greater sage grouse, coyotes, rabbits, raptors, and various smaller vertebrate and invertebrate species.

Livestock graze on some of these lands. Oil and gas activities have occurred in the general area.

Soils have a fair reclamation potential provided the hazards of wind and water erosion are mitigated through the use of surface roughening, management of grubbed vegetation, surface mulch, adequate water breaks, and drainage structures in recontoured areas. With proper management, suitable soil material is available to reestablish vegetation at the conclusion of project activities.

A cultural/historical resource inventory has been conducted on the public lands by a qualified archaeologist permitted in Wyoming by the BLM. A block survey for cultural resources was required by the BLM for the Doty Mountain POD. The findings have been submitted under separate cover. Any additional areas of potential effect identified subsequent to the completion of these reports will be inventoried as specified by the BLM, and a supplemental report will be prepared.

Landowner Notification

The Companies would obtain a surface use agreement with the landowner.

13. SITE-SPECIFIC CONDITIONS OF APPROVAL

Wildlife Stipulations

Wells AR Federal 17-91-3-22, AR Federal 17-91-5-22, AR Federal 17-91-7-22, AR Federal 17-91-11-22, AR Federal 17-91-13-22, AR Federal 17-91-15-22, and AR Federal 17-91-22I

Construction, drilling, and other activities potentially disruptive to strutting and nesting of greater sage grouse or sharp tailed grouse are prohibited during the period of March 1 through June 30 for the protection of nesting areas.

Road and Well Pad Minimum Requirements

Culverts (minimum 18 inches in diameter) will be placed in drainages and draws that are shown on the enclosed **Project Map**.

14. LESSEE'S REPRESENTATIVE AND CERTIFICATIONS

Representative for Anadarko E & P Company

Name:	William M. Fowler
Title:	Environmental and Regulatory Affairs Manager
Address:	1201 Lake Robbins Drive
City/State/Zip:	The Woodlands, Texas 77380
Phone:	(832) 636-3167

Bonding

BLM Nationwide Bond, WY 1280, $150,000

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill sites and access routes; that I am familiar with the conditions which currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by AEPC and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C 1001 for the filing of a false statement.

I also certify that AEPC will comply with the provisions of the law or the regulations governing the Federal or Indian right of reentry to the surface under 43 CFR 3814.

I also certify that AEPC has reached or will reach an agreement with the surface owner(s) and surface lessee(s) regarding the requirements for the protection of surface resources and reclamation of disturbed areas and/or damages in lieu thereof, or if an agreement cannot be reached, will comply with the provisions of the law or the regulations governing Federal or Indian right of reentry to the surface under 43 CFR 3814.

I also certify that:

A. All potentially affected landowners having properly permitted water wells with the WSEO within each producible well's Circle of Influence (one-half mile radius) will be offered a Water Well Agreement; and

B. If a Water Well Agreement is not reached with the landowner, AEPC agrees to mitigate the impacts of its producible wells in accordance with State of Wyoming water laws; and

C. Permits to Appropriate Groundwater have been applied for from the Wyoming State Engineer's Office, concurrently with these Applications for Permits to Drill.

I also certify that AEPC shall use its best efforts to conduct its approved operations in a manner that avoids adverse effects on any properties which are listed, or may be eligible for listing, in the National Register of Historic Places (NRHP). If historic or archaeological materials are uncovered during construction, the operator will immediately stop work that might further disturb such materials, and contact the authorized officer (or his/her representative) at the BLM Rawlins Field Office. Any paleontological resources or fossils discovered as a result of operations associated with these wells will be brought to the attention of the authorized officer or his/her representative immediately. All activities in the vicinity of such discoveries will be suspended until notified to proceed by the Authorized Officer.

I also certify that AEPC shall use its best efforts to conduct its approved operations in accordance with the Project-wide Mitigation Measures and procedures outlined in Chapter 2 of the Environmental Assessment (EA) for this project.

By: _____ Date: _____

William M. Fowler
Environmental and Regulatory Affairs Manager
Anadarko E & P Company